```
=> d his

     (FILE 'HOME' ENTERED AT 06:23:56 ON 28 OCT 2004)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 06:27:06 ON 28 OCT 2004
L1             2 S US20040127702/PN OR (US2003-666175# OR US2002-425596# OR US20
               E PEARLMAN B/AU
L2            31 S E4,E7-E9
               E ANTOSZ F/AU
L3            16 S E3-E5
L4           183 S ?EPLERENON?

     FILE 'REGISTRY' ENTERED AT 06:28:49 ON 28 OCT 2004
L5             1 S 107724-20-9

     FILE 'HCAPLUS' ENTERED AT 06:29:31 ON 28 OCT 2004
               SET SMARTSELECT ON
L6          SEL L1 1- RN :      100 TERMS
               SET SMARTSELECT OFF

     FILE 'REGISTRY' ENTERED AT 06:29:31 ON 28 OCT 2004
L7           100 S L6
L8            27 S L7 AND OC4-C5-C6-C6-C6/ES
L9             6 S L8 AND OC4/ES
L10            1 S L9 AND C27H32O4
               E C27H32O4/MF
L11            1 S E3 AND OC4-C5-C6-C6-C6/ES AND OC4/ES
L12            1 S L10,L11
               SEL RN
L13            0 S E1/CRN

     FILE 'HCAOLD' ENTERED AT 06:32:59 ON 28 OCT 2004
L14            0 S L12

     FILE 'USPATFULL, USPAT2' ENTERED AT 06:33:00 ON 28 OCT 2004
L15            1 S L12

     FILE 'HCAPLUS' ENTERED AT 06:33:01 ON 28 OCT 2004
L16            3 S L12
L17            1 S L16 AND L1-L3
L18            2 S L16 AND (PHARMACIA? OR UPJOHN?)/PA,CS
L19            3 S L16-L18

     FILE 'REGISTRY' ENTERED AT 06:37:28 ON 28 OCT 2004
L20              STR
L21            0 S L20
L22              STR L20
L23            7 S L22
L24         2101 S L22 FUL
               SAV TEMP L24 QAZI666/A
L25           45 S L20 FUL SUB=L24
               SAV TEMP L25 QAZI666A/A
L26              STR L20
L27           12 S L26 FUL SUB=L25
               SAV L27 TEMP QAZI666B/A
L28           11 S L27 NOT L12

     FILE 'HCAPLUS' ENTERED AT 06:40:24 ON 28 OCT 2004
L29            2 S L28
L30            1 S L29 AND L1-L3
L31            1 S L29 AND (PHARMACIA? OR UPJOHN?)/PA,CS
L32            3 S L19,L29-L31
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FILE 'USPATFULL, USPAT2' ENTERED AT 06:40:50 ON 28 OCT 2004
L33 1 S L28
L34 1 S L15,L33

=> fil reg
FILE 'REGISTRY' ENTERED AT 06:41:14 ON 28 OCT 2004

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 26 OCT 2004 HIGHEST RN 769912-90-5
DICTIONARY FILE UPDATES: 26 OCT 2004 HIGHEST RN 769912-90-5

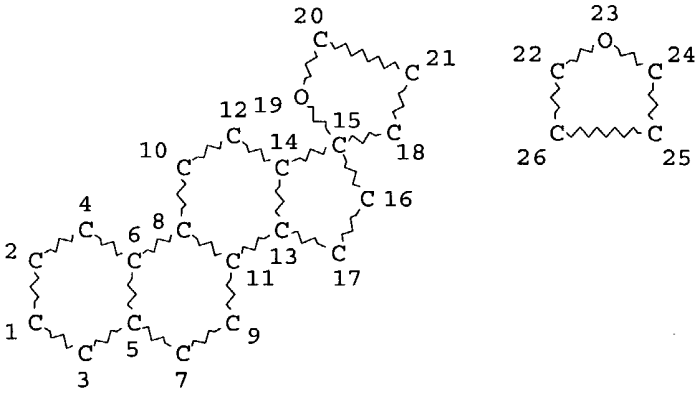
TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

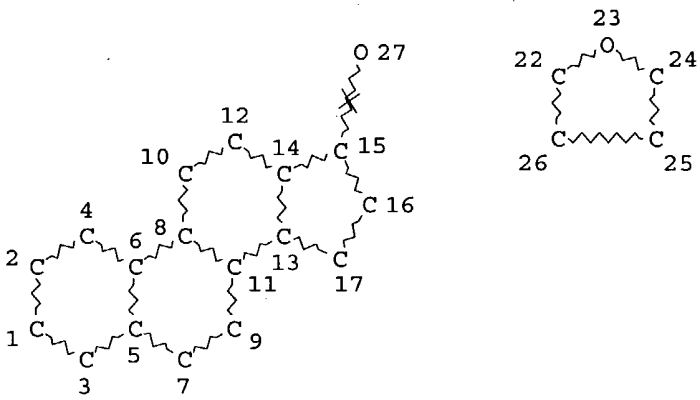
=> d sta que l27
L20 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE
L22 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE
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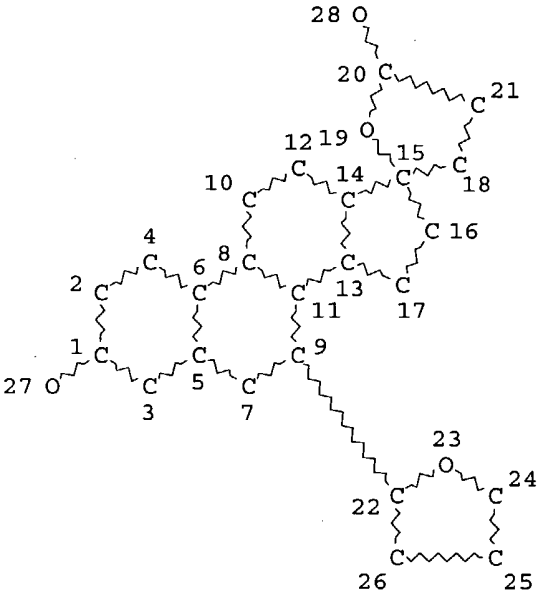
L25 45 SEA FILE=REGISTRY SUB=L24 SSS FUL L20
L26 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 28

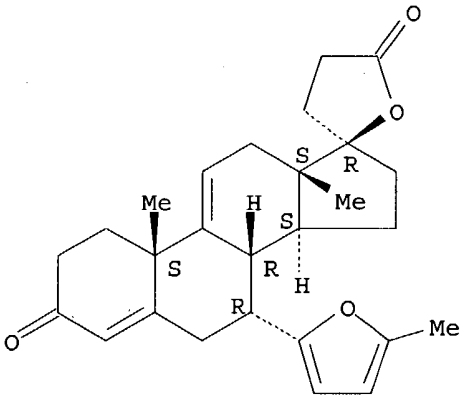
STEREO ATTRIBUTES: NONE
L27 12 SEA FILE=REGISTRY SUB=L25 SSS FUL L26

100.0% PROCESSED 13 ITERATIONS 12 ANSWERS
SEARCH TIME: 00.00.01

=> d ide can l12

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN **610785-40-5** REGISTRY
CN Pregna-4,9(11)-diene-21-carboxylic acid, 17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF **C27 H32 O4**
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

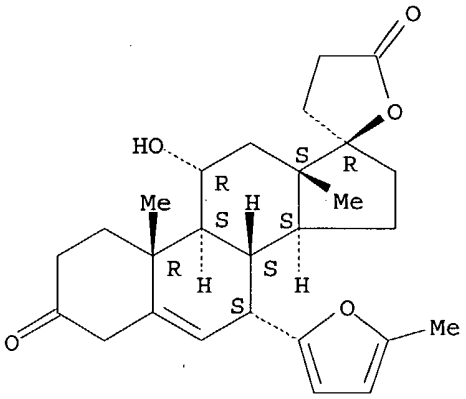
REFERENCE 1: 140:423864

REFERENCE 2: 139:307925

=> d ide can tot l28

L28 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 690958-98-6 REGISTRY
CN Pregn-5-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H34 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



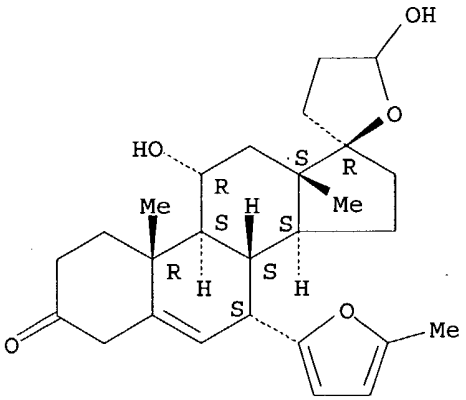
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

L28 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 690958-89-5 REGISTRY
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3-one, 4',5'-dihydro-5',11-dihydroxy-7-(5-methyl-2-furanyl)-, (7α,11α,17β)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H36 O5
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



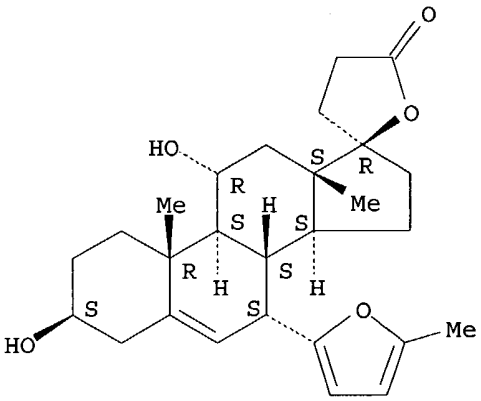
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

L28 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 690958-83-9 REGISTRY
CN Pregn-5-ene-21-carboxylic acid, 3,11,17-trihydroxy-7-(5-methyl-2-furanyl)-, γ-lactone, (3β,7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H36 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



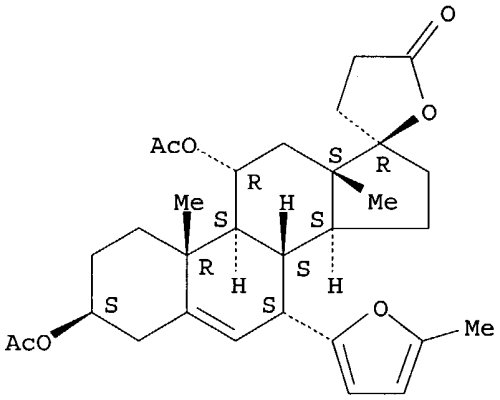
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

L28 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 690958-80-6 REGISTRY
CN Spiro[androst-5-ene-17,2'(5'H)-furan]-5'-one, 3,11-bis(acetyloxy)-3',4'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C31 H40 O7
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



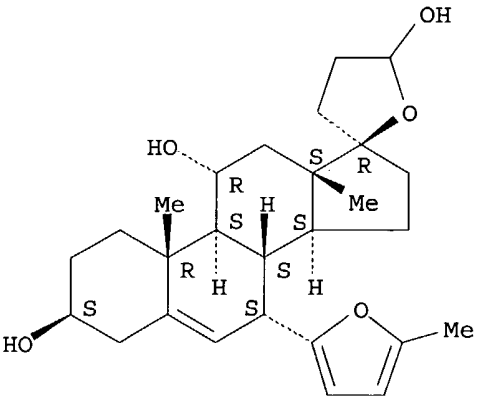
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

L28 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 690958-45-3 REGISTRY
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3,5',11-triol, 4',5'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H38 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



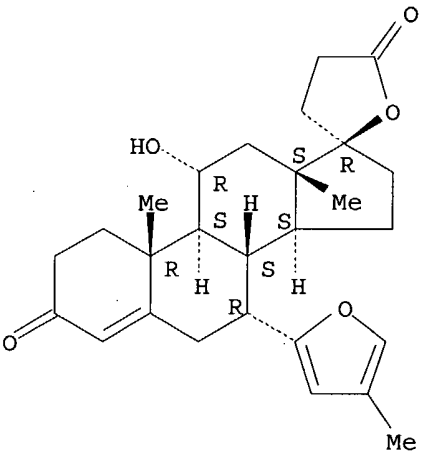
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

L28 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-54-1 REGISTRY
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(4-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H34 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.



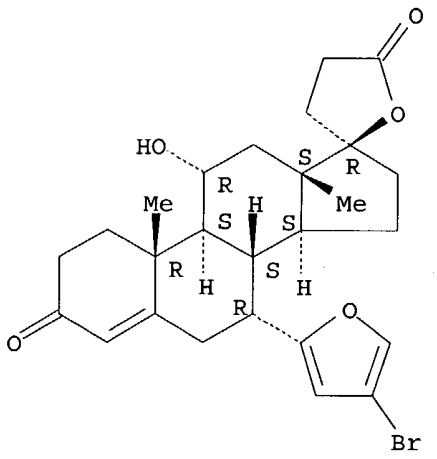
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:307925

L28 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-53-0 REGISTRY
CN Pregn-4-ene-21-carboxylic acid, 7-(4-bromo-2-furanyl)-11,17-dihydroxy-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C26 H31 Br O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.



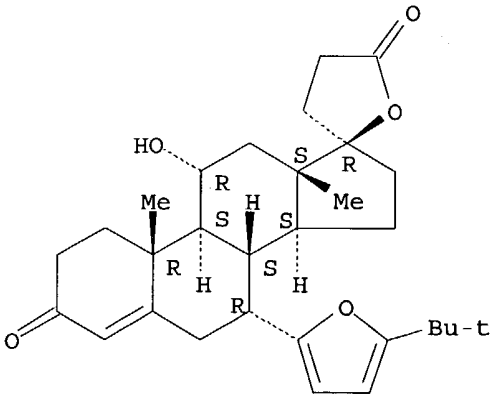
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:307925

L28 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-52-9 REGISTRY
CN Pregn-4-ene-21-carboxylic acid, 7-[5-(1,1-dimethylethyl)-2-furanyl]-11,17-dihydroxy-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C30 H40 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.



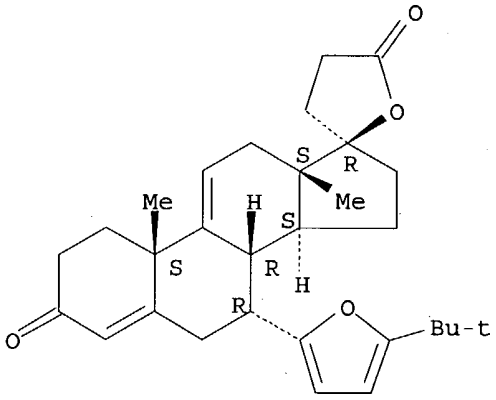
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:307925

L28 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-51-8 REGISTRY
CN Pregna-4,9(11)-diene-21-carboxylic acid, 7-[5-(1,1-dimethylethyl)-2-furanyl]-17-hydroxy-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C30 H38 O4
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.



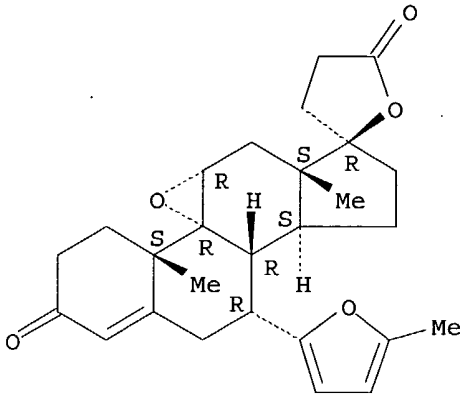
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:307925

L28 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-48-3 REGISTRY
CN Pregn-4-ene-21-carboxylic acid, 9,11-epoxy-17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H32 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

Absolute stereochemistry.



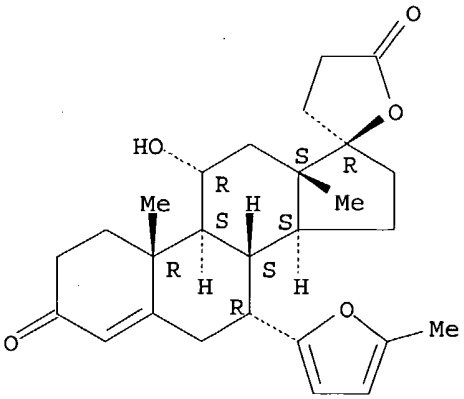
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:307925

L28 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2004 ACS on STN
RN 610785-47-2 REGISTRY
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C27 H34 O5
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:423864

REFERENCE 2: 139:307925

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 06:41:48 ON 28 OCT 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 28 Oct 2004 VOL 141 ISS 18
FILE LAST UPDATED: 27 Oct 2004 (20041027/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l32 all hitstr tot

L32 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:817907 HCAPLUS
ED Entered STN: 07 Oct 2004
TI Preparation of spirosteroids from 17-alkenyl or 17-alkynyl substrate via carbonylation, hydrogenation, dehydrogenation, furylation and other transformations
IN Franczyk, Thaddeus S., II; Wagner, Grace M.
PA **Pharmacia Corporation, USA**
SO PCT Int. Appl., 177 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07J
CC 32-1 (Steroids)
FAN.CNT 1

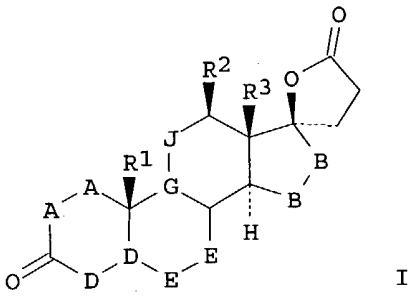
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004085458	A2	20041007	WO 2004-US8629	20040322

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-456716P P 20030321
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

WO 2004085458 ICM C07J
GI



I

AB Steroids such as I (R1, R2, R3 = H, halo, haloalkyl, OH, alkyl, alkoxy, hydroxyalkyl, alkoxyalkyl, hydroxycarbonyl, CN, aryloxy; A-A, B-B, D-D, and G-J = substituted or unsubstituted double or single bond with R groups similar to those for R1, R2, R3 in the substituted case) comprising a 17-spirolactone or corresponding open lactone structure is obtained by carbonylation of a 17-alkenyl or 17-alkynyl substrate. A 17-alkenyl intermediate may be prepared by semi-hydrogenation of a 17-alkynyl group. Multiple reaction schemes are disclosed for preparation of a 3-keto-9,11-epoxy-17-spirolactone steroid such as eplerenone. Novel intermediates are also disclosed, as well as steps for forming such novel intermediates, or converting them to further intermediates or products, by semi-hydrogenation, carbonylation, 6,7-dehydrogenation, furylation or other transformations or combinations thereof.

ST spirolactone steroid eplerenone prepn; hydrogenation carbonylation dehydrogenation furylation spirolactone steroid prepn

IT Carbonylation
Dehydrogenation
Hydrogenation
(preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)

IT Steroids
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(spiro; preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)

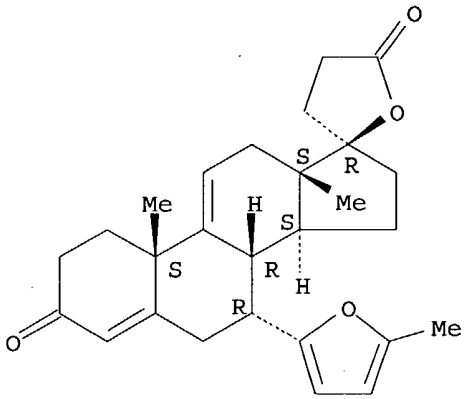
IT 192704-66-8P 610269-44-8P 610269-45-9P 610269-50-6P 610269-51-7P 769146-02-3P 769146-04-5P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)

IT 41850-21-9P 95716-71-5P 107724-20-9P, Eplerenone **610785-40-5P** 769146-08-9P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)

IT 434-03-7, Ethisterone 534-22-5 28319-72-4 95716-70-4 769146-05-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)

IT **610785-40-5P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of spirolactone steroid derivs. from 17-alkenyl or 17 alkynyl steroids via carbonylation, semi-hydrogenation, dehydrogenation, furylation and other transformations)
RN 610785-40-5 HCAPLUS
CN Pregna-4,9(11)-diene-21-carboxylic acid, 17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L32 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:414628 HCAPLUS
DN 140:423864
ED Entered STN: 21 May 2004
TI Processes for preparing C-7 substituted steroids from 5-androsten-3β-ol-17-one
IN Wuts, Peter Guillaume Marie
PA USA
SO U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K031-58
ICS C07J043-00; C07J021-00; C07J017-00
NCL 514173000; 514176000; 514178000; 540041000; 540107000; 540114000
CC 32-4 (Steroids)
Section cross-reference(s): 16
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004097475	A1	20040520	US 2003-392945	20030321
WO 2004043986	A1	20040527	WO 2003-US7284	20030321

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

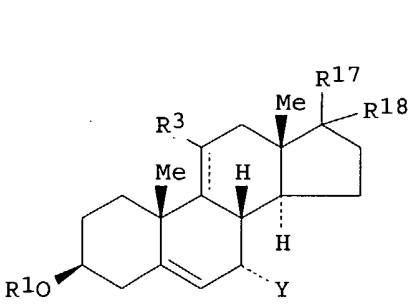
PRAI US 2002-424488P P 20021107

CLASS

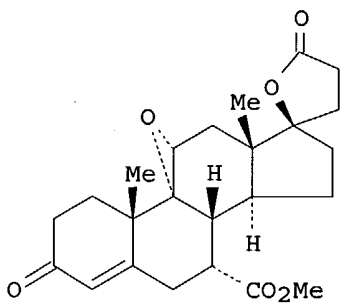
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004097475	ICM	A61K031-58
	ICS	C07J043-00; C07J021-00; C07J017-00
	NCL	514173000; 514176000; 514178000; 540041000; 540107000; 540114000

OS CASREACT 140:423864; MARPAT 140:423864

GI



II



V

AB The present invention discloses a process for the transformation of 5-androsten-3β-ol-17-one (I) to C-7 substituted steroids, such as II [R1 = H, COR2; R2 = alkyl, alkoxy; R3 = H, OR1; R17R18 = O, lactone; Y = CN, CH2CH:CH2, 5-(C1-6-alkyl)-2-furyl, 1-(C1-6-alkyl)-2-pyrrolyl, CHR4C(O)aryl, CHR4C(O)alkyl, CHR4C(O)X-aryl, CHR4C(O)X-alkyl; R4 = alkyl, aryl; X = O, S, dashed bond = single bond or double bond]. Thus, bioconversion of I to 5-androsten-3β,7β-diol-17-one (III) was performed using a submerged culture of Diplodia gossypina ATCC 20571. III was subsequently converted to 5-androsten-3β,7β,11α-triol-17-one (IV) using a submerged culture of Aspergillus ochraceus ATCC 18500. IV can also be obtained from II using a submerged culture of Absidia coerulea ATCC 6647. These intermediates are useful in the preparation of eplerenone (V).

ST carboxysteroid eplerenone prepn androstenol deriv hydroxylation androstenone; hydroxyandrostenone dihydroxyandrostenone trihydroxyandrostenone prepn

IT Aspergillus ochraceus
(ATCC 18500; for 11α-hydroxylation of 5-androsten-3β,7β-diol-17-one in preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Diplodia gossypina
(ATCC 20571; for 7β-hydroxylation of 5-androsten-3β-ol-17-one in preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Absidia coerulea
(ATCC 6647; for 7β,11α-dihydroxylation of 5-androsten-3β-ol-17-one in preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Hydroxylation
(biol.; during preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Lewis acids
RL: CAT (Catalyst use); USES (Uses)
(catalyst; during preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Bromination
Dehydration reaction
Ozonization

(during preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Isomerization
(of 4,5-double bond during preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Nucleophiles
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Steroids, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Sterols
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Acylation
Esterification
Hydroformylation
Oxidation
Silylation
(stereoselective; during preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT Allylation
(stereoselective; preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 537718-07-3P
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 95716-70-4P 192704-56-6P 537718-14-2P **610785-40-5P**
610785-45-0P **610785-47-2P** 685877-48-9P 685877-49-0P
685877-50-3P 685877-51-4P 690958-24-8P 690958-30-6P 690958-38-4P
690958-45-3P 690958-80-6P 690958-83-9P
690958-89-5P 690958-95-3P **690958-98-6P**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 107724-20-9P, Eplerenone
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 192704-58-8P
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 2487-48-1P
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 54761-04-5, Ytterbium triflate 144026-79-9, Scandium triflate
RL: CAT (Catalyst use); USES (Uses)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 690959-06-9P 690959-08-1P 690959-11-6P 690959-13-8P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 53-43-0 74-86-2, Acetylene, reactions 534-22-5, 2-Methylfuran
762-72-1, Allyltrimethylsilane 763-13-3 7677-24-9,

Trimethylsilylcyanide 40474-65-5 67576-47-0 86298-22-8 537718-13-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

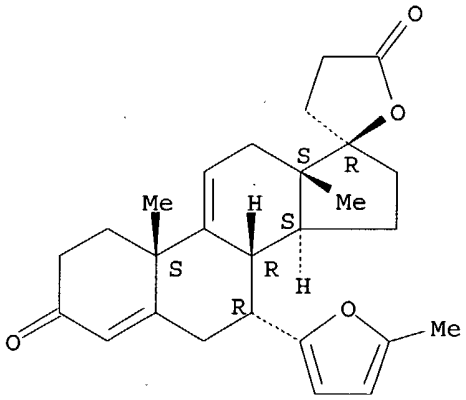
IT 144-62-7, Oxalic acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT 75-05-8, Acetonitrile, uses 75-09-2, Dichloromethane, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

IT **610785-40-5P 610785-47-2P 690958-45-3P**
690958-80-6P 690958-83-9P 690958-89-5P
690958-98-6P
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)

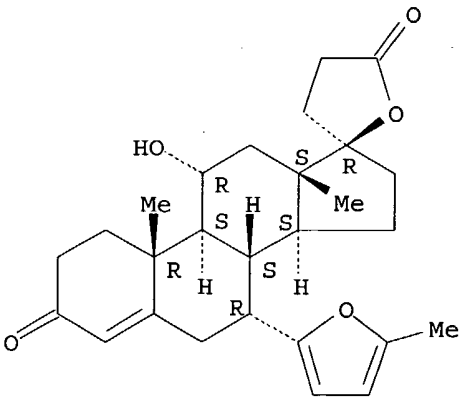
RN 610785-40-5 HCAPLUS
CN Pregna-4,9(11)-diene-21-carboxylic acid, 17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 610785-47-2 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

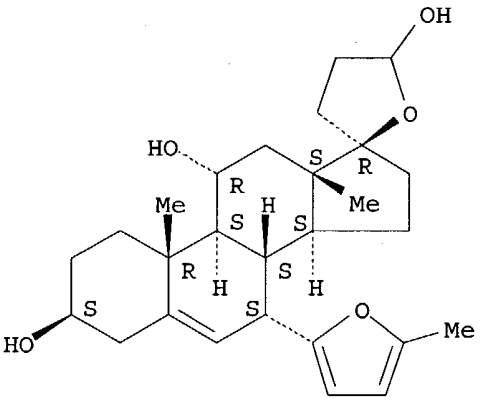
Absolute stereochemistry.



RN 690958-45-3 HCAPLUS

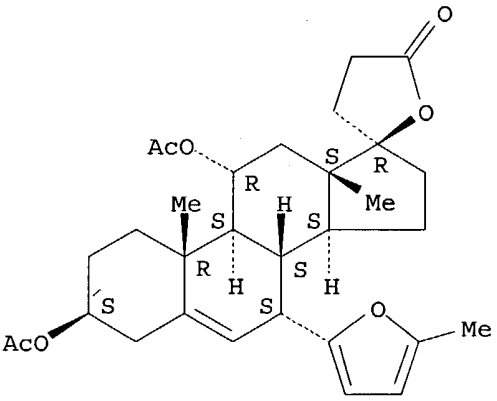
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3,5',11-triol, 4',5'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



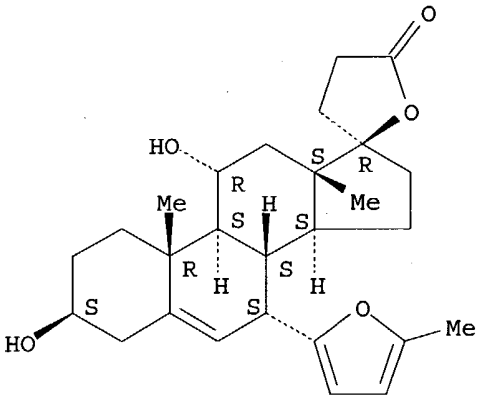
RN 690958-80-6 HCAPLUS
CN Spiro[androst-5-ene-17,2'(5'H)-furan]-5'-one, 3,11-bis(acetyloxy)-3',4'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



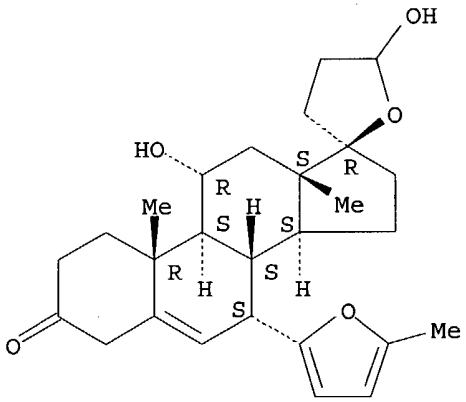
RN 690958-83-9 HCAPLUS
CN Pregn-5-ene-21-carboxylic acid, 3,11,17-trihydroxy-7-(5-methyl-2-furanyl)-, γ-lactone, (3β,7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



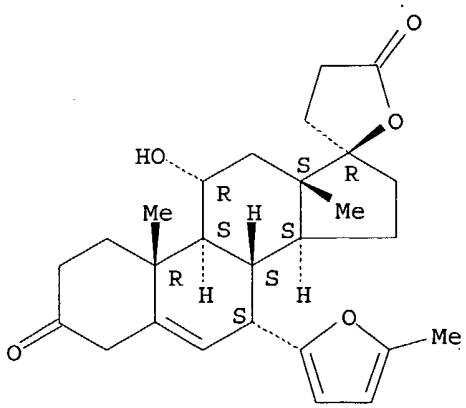
RN 690958-89-5 HCAPLUS
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3-one, 4',5'-dihydro-5',11-dihydroxy-7-(5-methyl-2-furanyl)-, (7α,11α,17β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 690958-98-6 HCAPLUS
CN Pregn-5-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L32 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:796726 HCAPLUS
DN 139:307925
ED Entered STN: 10 Oct 2003
TI Process to prepare eplerenone and its intermediates from Δ9-canrenone and other pregnanes
IN **Pearlman, Bruce Allen**; Padilla, Amphlett Greg; Havens, Jeffrey L.; Mackey, Sonja S.; Wu, Haifeng
PA **Pharmacia & Upjohn Company, USA**
SO PCT Int. Appl., 429 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07J001-00
CC 32-5 (Steroids)
Section cross-reference(s): 2, 63
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003082895	A2	20031009	WO 2003-US7793	20030321 <--
	WO 2003082895	A3	20040422		
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	US 2003232981	A1	20031218	US 2003-392833	20030321 <--
	US 2004024202	A1	20040205	US 2003-392857	20030321 <--
	WO 2004037844	A1	20040506	WO 2003-US29923	20030919 <--
	WO 2004037844	C1	20040610		
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	US 2004127702	A1	20040701	US 2003-666175	20030919 <--
PRAI	US 2002-366784P	P	20020322		
	US 2002-411874P	P	20020919 <--		
	US 2002-425596P	P	20021112 <--		
	US 2003-392833	A	20030321		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003082895	ICM	C07J001-00

OS CASREACT 139:307925; MARPAT 139:307925
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention involves novel intermediates I [R9 = H, OH, O-PG, F; PG = SiMe3, SiEt3, Ac, CHO; R11 = :O, H2, αR11-1βR11-2, R11-5R11-6; R11-1 = H, OR11-3; R11-2 = H, OR11-4; R11-3 = H, PG; R11-4 = H, PG; R11-5R9 = bond, R11-6 = H or R11-6R9 = bond, R11-5 = H; R11-7R9 = O; R11-8 = H; R17 = :O, αR17-1βR17-2, αR17-3βR17-4, αR17-5βR17-6, αR17-7βR17-8, OCH(OR17-9)CH2CH2, αR17-11βR17-12; R17-1 = H, C.tplbond.CH, CN, C.tplbond.CCH2αR17-1-1, C.tplbond.CCH2O-PG, CH2CH2CO2-; R17-2 = OH; R17-3 = OH; R17-4 = COMe, COCH2OH, COCH2OC(:O)(CH2)0-3Me; R17-5R17-6 = α-CH2O-β; R17-7R17-8 = α-OC(:O)CH2CH2-β; R17-9 = H, C1-3-alkyl; R17-11 = (CH2)1-2CH:CH2; R17-12 = OH; R17-1-1 = H, Si(R17-1-2)3; R17-1-2 = C1-4-alkyl, CH(OEt)Me, THP], including an 7α-substituted steroid, and various novel processes which are used to prepare known intermediates useful in the production of eplerenone, a pharmaceutical agent. Thus, pregnadienone spirolactone II was prepared from Δ9-canrenone (III) via conjugate addition of 2-methylfuran in MeNO2 containing BF3·OEt2, ring cleavage with dibromantin in aqueous THF containing KOAc, ozonolysis (O3/O2) in CH2Cl2/O2(CHMe2)2 with Me2S quenching in CHCl3 and oxidation in CHCl3 with H2O2 in H2O containing KHCO3.

ST eplerenone steroid prepn; hexahydronaphthalene ketal enol ether prepn

IT Isomerization
(cis-trans, of pregnenone maleates to fumarates; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Addition reaction
(conjugate, of furans to pregnenones; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Ethers, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(enol, alkyl, reaction of, with a hydride abstractor; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Oxidation, electrochemical
(from alkyl enol ethers; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Abstraction reaction
(hydrogen, from alkyl enol ethers; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Alcohols, reactions
Glycols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(ketalization by, of Δ3,5-dienol ether; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Ozonization
(of pregnenone maleates and fumarates; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Steroids, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(pregnanes; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT Ketals
RL: SPN (Synthetic preparation); PREP (Preparation)
(Δ4,6-; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 534-22-5, 2-Methylfuran 930-27-8, 3-Methylfuran 7040-43-9, 2-(tert-Butyl)furan
RL: RCT (Reactant); RACT (Reactant or reagent)
(conjugate addition of, to pregnadienone derivs.; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 22037-28-1P, 3-Bromofuran

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(conjugate addition of, to pregnadienone derivs.; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 95716-71-5, Δ9-Canrenone 192569-17-8, 11α-Hydroxycanrenone
RL: RCT (Reactant); RACT (Reactant or reagent)
(conjugate addition to, by methylfurans; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 192704-56-6, 11α,17β-Dihydroxypregn-4-en-3-one 7α,21-dicarboxylic acid γ-lactone methyl ester
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydration of; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 67-68-5D, DMSO, o-iodoxybenzoic acid complex 75-91-2D, ruthenium trichloride complex 84-58-2, DDQ 118-75-2, p-Chloranil, reactions 341-02-6, Trityl fluoroborate 536-80-1, Iodosobenzene 546-67-8, Lead tetraacetate 993-02-2, Manganic acetate 1122-96-9D, 4-Methoxypyridine N-oxide, o-iodoxybenzoic acid complex 1184-78-7D, Trimethylamine N-oxide, o-iodoxybenzoic acid complex 1313-13-9, Manganese dioxide, reactions 1333-82-0D, Chromium trioxide, 2,5-dimethylpyrazole complex 2435-53-2, o-Chloranil 2712-78-9, Iodobenzene bistrifluoroacetate 3240-34-4, Iodobenzene diacetate 3375-31-3 7529-22-8D, N-Methylmorpholine N-oxide, o-iodoxybenzoic acid complex 7782-68-5, Iodic acid (HIO3) 10049-08-8D, Ruthenium trichloride, tert-Bu hydroperoxide complex 10139-51-2, Ceric ammonium nitrate 12029-98-0, Iodine pentoxide 14546-48-6, Manganese(III), reactions 15158-12-0, Lead+4, reactions 16065-88-6, reactions 18540-29-9, reactions 20492-50-6 22537-44-6, Ruthenium+8, reactions 23317-90-0, Manganese+7, reactions 64297-64-9, o-Iodoxybenzoic acid
RL: RGT (Reagent); RACT (Reactant or reagent)
(hydrogen abstraction by, in δ4,6-steroid ketals; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 107-21-1, Ethylene glycol, reactions 126-30-7, Neopentyl glycol
RL: RCT (Reactant); RACT (Reactant or reagent)
(ketalization by, of Δ3,5-dienol ether; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 192704-66-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(ketalization of; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 610785-46-1P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and Baeyer-Villiger oxidation of, with peracetic acid; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 610785-42-7P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and cis-trans isomerization of; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 610785-55-2P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and crystal structure of; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT **610785-47-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and dehydration of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)

IT 95716-74-8P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and esterification or lactone hydrolysis of; preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT 610785-44-9P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and intramol. conjugate addition of; preparation of eplerenone and its
intermediates from Δ9-canrenone and other pregnanes)

IT 610785-45-0P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and ketalization of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)

IT 610785-57-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ozonolysis of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)

IT 610785-41-6P 610785-43-8P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and ozonolysis of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)

IT 610785-50-7P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and ozonolysis of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)

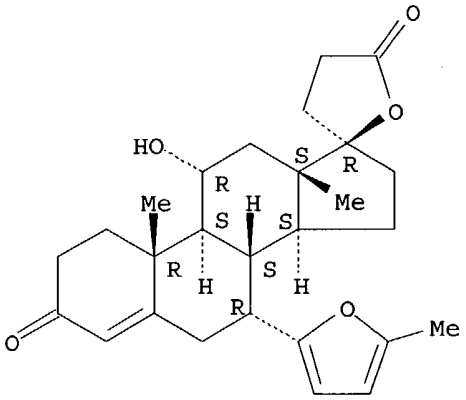
IT 610785-56-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ozonolysis or reaction of, with hydrogen peroxide; preparation
of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

IT **610785-40-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and ring cleavage of, with dibromantin; preparation of eplerenone
and its intermediates from Δ9-canrenone and other pregnanes)

IT 107724-20-9P, Eplerenone
RL: PNU (Preparation, unclassified); PREP (Preparation)
(preparation of eplerenone and its intermediates from Δ9-canrenone and

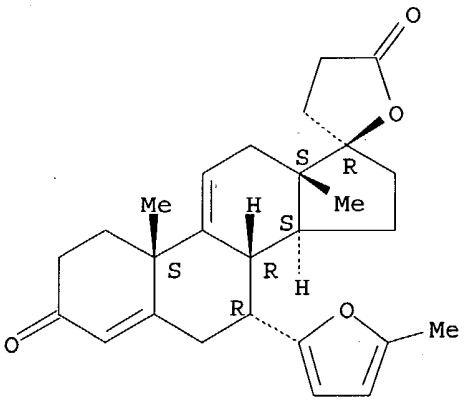
other pregnanes)
IT 95717-00-3, 9α,11α-Epoxycanrenone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)
IT 611199-42-9, N-(1,1,2,2,3,3,3-Hexafluoropropyl)diethylamine
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)
IT 95716-70-4P 209253-82-7P 610785-38-1P 610785-39-2P
610785-48-3P 610785-49-4P **610785-51-8P**
610785-52-9P 610785-53-0P 610785-54-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)
IT **610785-47-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and dehydration of; preparation of eplerenone and its intermediates
from Δ9-canrenone and other pregnanes)
RN 610785-47-2 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **610785-40-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and ring cleavage of, with dibromantin; preparation of eplerenone
and its intermediates from Δ9-canrenone and other pregnanes)
RN 610785-40-5 HCAPLUS
CN Pregna-4,9(11)-diene-21-carboxylic acid, 17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)

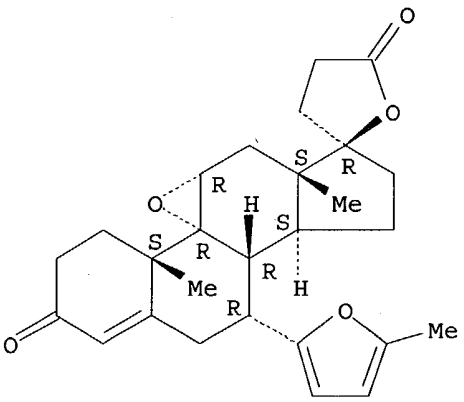
Absolute stereochemistry.



IT **610785-48-3P 610785-51-8P 610785-52-9P**
610785-53-0P 610785-54-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of eplerenone and its intermediates from Δ9-canrenone and other pregnanes)

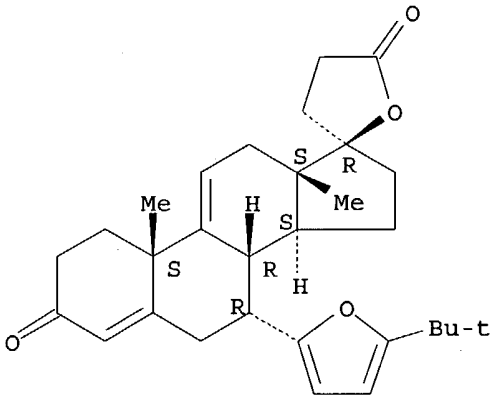
RN 610785-48-3 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 9,11-epoxy-17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.



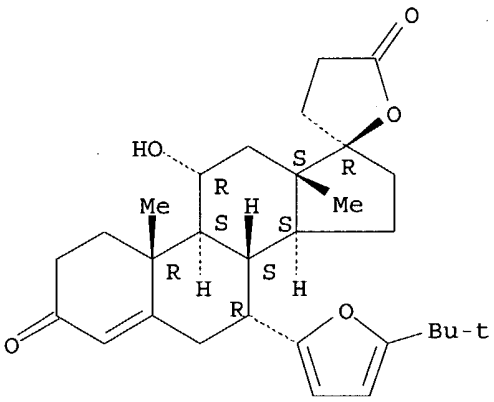
RN 610785-51-8 HCAPLUS
CN Pregna-4,9(11)-diene-21-carboxylic acid, 7-[5-(1,1-dimethylethyl)-2-furanyl]-17-hydroxy-3-oxo-, γ-lactone, (7α,17α)- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.



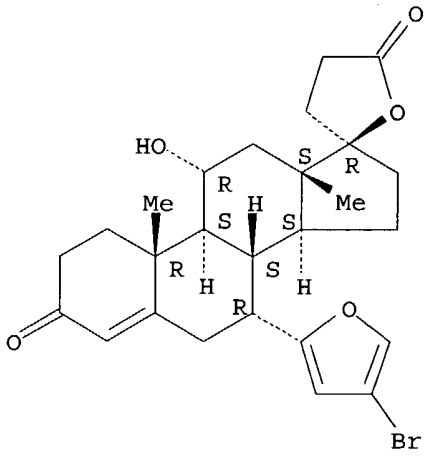
RN 610785-52-9 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 7-[5-(1,1-dimethylethyl)-2-furanyl]-11,17-dihydroxy-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



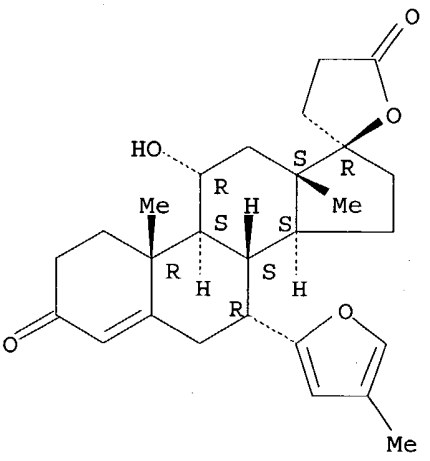
RN 610785-53-0 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 7-(4-bromo-2-furanyl)-11,17-dihydroxy-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 610785-54-1 HCAPLUS
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(4-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

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CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

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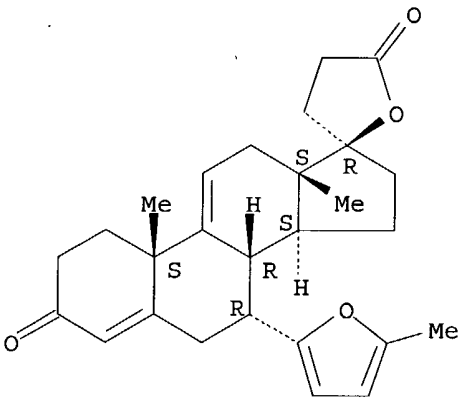
L34 ANSWER 1 OF 1 USPATFULL on STN
AN 2004:127491 USPATFULL
TI Processes for preparing C-7 substituted steroids
IN Wuts, Peter Guillaume Marie, Mattawan, MI, UNITED STATES
PI US 2004097475 A1 20040520
AI US 2003-392945 A1 20030321 (10)
PRAI US 2002-424488P 20021107 (60)
DT Utility

FS APPLICATION
LREP PHARMACIA & UPJOHN, 301 HENRIETTA ST, 0228-32-LAW, KALAMAZOO, MI, 49007
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 975
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to processes for the preparation of novel 7-carboxy substituted steroid compounds of Formula I, ##STR1##

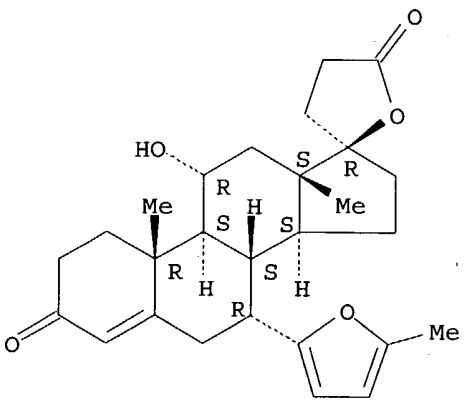
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **610785-40-5P 610785-47-2P 690958-45-3P 690958-80-6P 690958-83-9P 690958-89-5P 690958-98-6P**
(preparation of C-7 substituted steroids from 5-androsten-3β-ol-17-one)
RN 610785-40-5 USPATFULL
CN Pregna-4,9(11)-diene-21-carboxylic acid, 17-hydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 610785-47-2 USPATFULL
CN Pregn-4-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

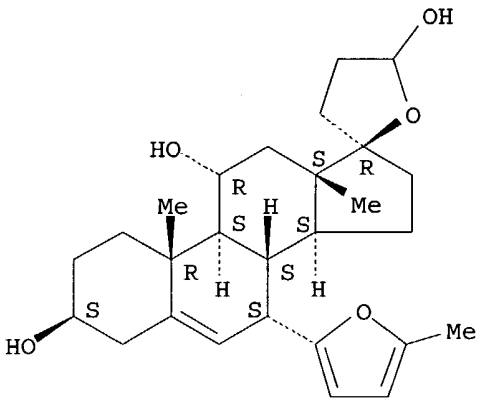
Absolute stereochemistry.



RN 690958-45-3 USPATFULL
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3,5',11-triol, 4',5'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA

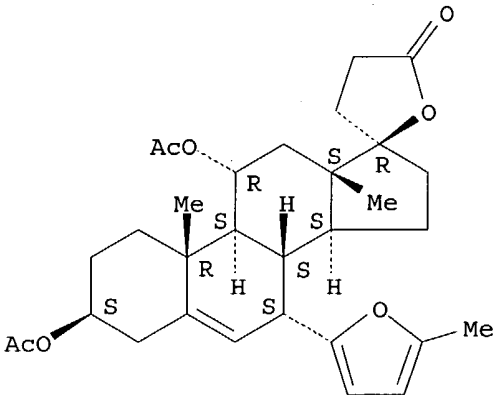
INDEX NAME)

Absolute stereochemistry.



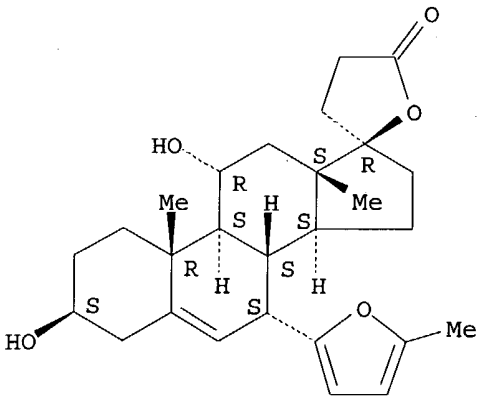
RN 690958-80-6 USPATFULL
CN Spiro[androst-5-ene-17,2'(5'H)-furan]-5'-one, 3,11-bis(acetyloxy)-3',4'-dihydro-7-(5-methyl-2-furanyl)-, (3β,7α,11α,17β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



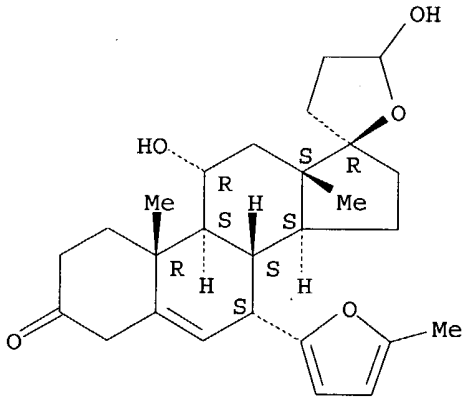
RN 690958-83-9 USPATFULL
CN Pregn-5-ene-21-carboxylic acid, 3,11,17-trihydroxy-7-(5-methyl-2-furanyl)-, γ-lactone, (3β,7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 690958-89-5 USPATFULL
CN Spiro[androst-5-ene-17,2'(3'H)-furan]-3-one, 4',5'-dihydro-5',11-dihydroxy-7-(5-methyl-2-furanyl)-, (7α,11α,17β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 690958-98-6 USPATFULL
CN Pregn-5-ene-21-carboxylic acid, 11,17-dihydroxy-7-(5-methyl-2-furanyl)-3-oxo-, γ-lactone, (7α,11α,17α)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.